

threshold value. Applicants submit that Hotani does not overcome Uesugi's deficiency with respect to teaching the feature of ranking only the symbols whose likelihoods equal or exceed the threshold value, for the reasons discussed below.

The Office Action proposes that Hotani teaches comparing a symbol likelihood to a threshold value and that it would be obvious to integrate Hotani's comparator into Uesugi's interference signal cancelling system to achieve a predetermined target value (page 2, last line, through page 3, line 3). For the purpose of establishing a common understanding of the subject matter in controversy, Applicants presume that the Office Action's reference to achieving a predetermined target value is intended to mean obtaining a limited number of ranked likelihoods by ranking only the symbols whose likelihoods equal or exceed a threshold value. The reason why achieving a predetermined target value would be obvious, according to the Office Action, is that likelihood information cannot be used unless it is compared to a threshold value (page 2, last 3 lines). Applicants respectfully disagree with the Office Action's conclusion and the rationale offered to support it.

The proposal that likelihood information cannot be used unless it is compared to a threshold value is factually untrue. Likelihood information can be used without comparing it to a

threshold value. For example, if the system of claim 1 calculated that a first symbol was received with an expected likelihood of 60% and a second symbol was received with an expected likelihood of 20%, a skilled artisan would realize that the first symbol was more likely received than the second symbol. And the skilled artisan would arrive at this realization without having to first compare the two likelihoods to a threshold value. Therefore, in this example, the skilled artisan could successfully use the likelihood information without comparing it to a threshold value.

Moreover, by extension of the example provided above, a 60% likelihood is always greater than a 20% likelihood regardless of the threshold to which the likelihoods might be compared. The operation of comparing a symbol's expected likelihood of receipt to a threshold value does not, and cannot, change the symbol's expected likelihood of receipt.

Accordingly, the proposal that likelihood information cannot be used unless it is compared to a threshold value is fallacious. Since this proposal is fallacious and is the only rationale offered to support the basis for combining the teachings of the two references, it necessarily follows that evidentiary record does not support a conclusion of obviousness for the subject matter of claim 1.

Furthermore, the Office Action tacitly acknowledges, for the reason explained above, that Uesugi does not teach the claimed feature of ranking only the symbols whose likelihoods equal or exceed a threshold value. And the Office Action does not directly contend that Hotani provides such a teaching. Instead, the Office Action proposes that Hotani suggests achieving a predetermined target value by subtracting a likelihood value from an appointed threshold value. But the Office Action provides no explanation as to how a skilled artisan would find a suggestion to rank only symbols whose likelihoods equal or exceed a threshold value from the proposed teaching of achieving a predetermined target value. More importantly, in that such is required to support the rejection of claim 1, the Office Action provides no explanation as to how the skilled artisan would find a suggestion to rank only the symbols whose likelihoods equal or exceed a threshold value from Hotani's actual teaching of comparing a weighted likelihood value to a threshold value for the purpose of determining a position of frame synchronization (see Hotani col. 5, lines 55-61).

In accordance with the above discussion, Applicants submit that the applied references do not teach or suggest the subject matter defined by claim 1. Independent claims 5 and 6 similarly recite the subject matter distinguishing apparatus claim 1 from the applied references, though claim 6 does so with respect to a

method. For similar reasons that claim 1 distinguishes over the applied references, so too do claims 5 and 6. Therefore, allowance of claims 1, 5, and 6 and all claims dependent therefrom is warranted.

To promote a better understanding of the differences between the claimed subject matter and the applied references, Applicants submit the following additional remarks.

The present invention provides the features of comparing a likelihood to a predetermined threshold and limiting the symbols subject to ranking to the ones having a greater likelihood than the threshold. These features provide the advantage of reducing the number of symbols subject to ranking and, thereby, support performing the ranking processing at high speed.

The Office Action proposes that Hotani discloses determining whether a likelihood is greater than a predetermined threshold and utilizing the comparison result. However, with regard to the threshold comparison, Hotani discloses performing synchronization processing when the likelihood is greater than the threshold.

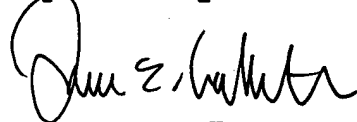
The present invention, on the other hand, is designed to limit the symbols subject to ranking processing utilizing the comparison results of likelihood. In addition, provided that every iteration of canceller processing reduces the number of high-likelihood symbols, the present invention is designed such that the threshold

for likelihood can be changed upon every canceller processing iteration (see claims 2-6). Hotani does not disclose or suggest this particular feature of the present invention. Therefore, the present invention is non-obvious in view of the applied references.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



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